

The CHEMIST

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THE CHEMIST IN MEDICO-LEGAL WORK

The meeting of the New York Chapter on February 6th, marked a return engagement of Dr. Alexander O. Gettler, Toxicologist for the City of New York.

Feeling that many of his listeners might not be interested in the actual chemistry of his work, Dr. Gettler had brought numerous samples and exhibits, and proceeded to talk informally about many of the interesting cases which have come to his attention from time to time.

As Toxicologist and Medico-Legal Chemist for the City of New York, Dr. Gettler is connected with the office of the Chief Medical Examiner. His preliminary remarks brought out the information that New York is one of the very few cities in the country which maintain an office of this kind; and that most communities have the work of this office handled by a coroner or a county physician. The Chief Medical Examiner is a civil service appointee; other department heads, called Commissioners, are appointed by the Mayor.

The duties of the medico-legal work, of which Dr. Gettler is in charge, are to investigate the cause of all sudden or suspicious deaths, suicides, and homicides. Autopsy is allowed by law in any of these cases, with or without the permission of relatives of the deceased. A large part of the work has to do with poisons, but not all; and for the adequate functioning of the department, it should have available the services of chemists, pathologists, histologists, and bacteriologists. The last two are still missing because the yearly budget is unfortunately not large enough to cover these necessary employees.

As Dr. Gettler ran through the case histories of the various samples before him, they seemed to admit his audience to the inner secrets of stories that are the very life and substance of the tabloids. Here was chloroform from the brain of Ruth Snyder's husband; here was the heroin that killed Jeanne Eagels; here was strychnine from the liver of some poor poisoned man; here were some beautiful crystals of veronal from the brain of Emily Stevens. And at the relatively large amount of the last named, the doctor expressed the grisly joy and happiness which he and his assistants feel at so satisfactory an amount of evidence.

In the detection of poisons it is necessary to analyze various organs, such as the heart, brain, liver, etc., both qualitatively and quantitatively; and because of the very small amounts of the substances sought and found, work of this nature is different from all other analytical chemistry. For example:

"One-quarter of a grain of strychnine may kill, and one-half a grain will surely kill, the average individual. In a body weighing 130 pounds this half-grain—thirty

milligrams—will be distributed over the whole mass; and in the pound of tissue taken for the average analysis only 0.2 mg. is present. It is quite a problem to separate this small amount of strychnine from the endless other organic compounds in that pound of tissue, purify it and get it into a condition which permits the requisite tests.

"Another common case is that of poisoning by inhaling HCN fumes. A chemist not experienced in cadaver analysis usually finds no cyanide; but experience has taught us to recognize reactions, even though they are faint and masked. We then concentrate and purify the substance until the definite typical reactions are obtained."

Several alleged whiskies were exhibited, each of which had caused the death of some person or persons; they were proved to contain amyl alcohol, formaldehyde, cyanide, wood alcohol, etc. Another case, presumably a death from alcoholism, showed that the victim had drunk a nicotine plant spray, thinking it was whiskey.

In order to have a conclusive answer to the question that is always asked in court, "Was this man intoxicated?" Dr. Gettler undertook a piece of research which lasted nearly four years. But he found the answer!

Six thousand cases were studied—as to the history of each case for several hours before death; the state of equilibrium of the man, as observed before his death; and a quantitative analysis of various organs of the body. All these recorded facts, as well as the results of months of animal experimentation, went to make up the findings in this exhaustive study. The definite conclusion was reached that the presence of 0.25% (or over) of alcohol in the brain indicates a state of intoxication at the time of death. With this much definitely known, the alcoholic content of other organs need not be taken into consideration. A certain amount of alcohol in the brain affects everybody alike. The department makes no attempt to determine the nature of the intoxicant; only to determine quantitatively the presence of alcohol.

In connection with the discussion of this work, Dr. Gettler cited a case which could be taken to prove that a sense of humor can enter into the personal equation of even those who must necessarily spend their days among corpses, detached stomachs and brains, puddles of blood, etc.

"About a year and a half ago, a certain aviator (who, with two others, had successfully flown the Atlantic the year before) was killed when his plane crashed immediately after he took off from Roosevelt Field. Analysis of the brain showed a large amount of alcohol, proving that the man had been intoxicated at the time of death. Accordingly, this was the report which I sent to the District Attorney's office.

"For some peculiar reason, the American public chooses to think that all fliers are angels, and when the newspapers got hold of my report that this one had been drunk, no one wanted to believe it.

"A certain paper ran a series of interviews, quoting a different doctor every evening, each one of whom said that no one can tell if a man is drunk, and that therefore no one could know whether this aviator was drunk when he crashed.

"On the first evening they quoted an optometrist, who said no; the next night it was a surgeon; the third night, an internist said no; and so on, until several kinds of doctors had contradicted me.

"When it was all over I told the District Attorney that if my opinion had been asked on a question in surgery I should have admitted that it is not in my line. If a man wants his appendix removed, he goes to a good surgeon—not to anyone else. Not one of these doctors had had any experience in toxicology, yet when a pathological problem comes up, anyone with an M.D. feels qualified to discuss it.

"The fact remains that here is the silver acetate produced from the alcohol which was originally in the half of this man's brain which I analyzed; I am still holding the other half because the owner of the plane challenged me and said he would send his own chemist to make an analysis."

In concluding his account of this case, Dr. Gettler read a sobbing letter from a physician who, from his wide experience in post-mortem work, had his doubts on how the determination was reached; and expressed his surprise that a man of Dr. Gettler's standing would be so cowardly as to blacken the good name of a young man who had always had a good reputation in his own home town.

Through his work at New York University, Dr. Gettler is completing the research in micro-chemical work on the presence of alcohol in normal individuals who have not drunk intoxicating beverages.

An equally interesting piece of research was carried out by the department on chloroform, so that definite knowledge could be had on whether a person is anesthetized at the time of death. This also was carried out on both dogs and humans, and it was learned that the presence of any amount equivalent to 150 mg. or more in the human brain indicates death during anesthesia. This knowledge, also, is extremely valuable in solving many medico-legal cases.

The discussion of carbon monoxide brought forth many interesting stories. In one, the incontrovertible evidence of the department aided in the solution of a murder which had been planted to seem like suicide or accidental death. Another case was that of the alleged death by fire of an undertaker who had been insured for \$125,000 in favor of his partner.

"The insurance company and the doctor for the other undertaker divided the remains, and the latter requested me to make analyses for poisons (which would necessarily prevent settlement by the insurance company). My allotment consisted of a piece of lung, a piece of liver, and a piece from each kidney, and the results were rather surprising.

"First, there was no poison present except formaldehyde; second, there was no carbon monoxide (which is always present when a living person is burned to death); third, the state of the lung showed that this person was in the last stages of pneumonia and could not possibly have been walking about on the day of his death.

"Some of the assembled evidence showed that the undertaker had been seen walking down the road shortly before the house burned and that the dead body measured three inches taller than the known height of the undertaker. The absence of carbon monoxide

showed that the man had not been burned alive, and finally, the presence of formaldehyde indicated that the body which was burned had been embalmed. The conclusive evidence indicated that the undertakers had planted a dead body in the house, hoping to collect the insurance on it. Yet, in spite of all this, the insurance company actually lost the case."

Dr. Gettler next discussed the fate of the victims of radium poisoning at the now notorious manufacturing plant in Orange, N. J. He described how the radium, which entered the body as the girls pointed the brushes in their mouths, gradually caused the disintegration of the jaws, crippled the backbone, and finally affected the entire body.

"We have three methods of determining the presence of radio-active substances. First, by the electroscopic testing of a bone or something, which permits an estimate of the amount of radium in the body. Second, by the development of photographic plates through heavy paper or sheet lead. Of the three emanations of radium only the gamma rays will pass through lead. Normal bones would have no effect on a photographic plate, but radio-active bones would develop the plates after standing on them for several days. If any one bone shows this property, the entire body is radio-active.

"The third method is that of the Geiger counter, an instrument which contains a complicated set-up, somewhat like that of the radio. Radium emanations are passed into the ionizing chamber of the counter, where the click from each feeble electron is amplified and converted into audible waves which pass through a loud speaker."

A careful analysis of stomach contents once solved a mysterious disappearance, and brought about the conviction of a man who had murdered his wife. He had covered her body with lime—which very effectively prevented identification of her features and clothes—and concealed it in a pit; and if someone had not remembered that the missing woman had eaten some grapes, nuts, and raisins very late on a certain evening, her husband might have escaped detection.

The discussion of cyanide poison cases brought forth another whole series of stories. One was the case, during the war, of a temperamental, patriotic girl suicide who drank a certain silver polish because a policeman told her to take down her Jewish flag. A meddling woman lawyer took up her cause, secured a statement signed by several alleged witnesses who said that the girl had been killed by the policeman who later poured cyanide down her throat. Only the conclusive evidence that poison was found in all the organs tested saved the policeman from finding himself in an extremely difficult situation.

Another case was that of an elderly couple who died in a certain hotel from cyanide fumigation in rooms below their own. It resolved itself into a case of negligence against the man who did the actual work, and in reciting the evidence that was brought up by the "experts" on the other side, Dr. Gettler expressed himself very succinctly on the actual value of alleged expert court testimony. In no doubtful terms, he gave his opinion of the

physician, an X-ray specialist, who described himself as an expert pathologist, yet defined pathology as "the science of poisons," and of the chemistry professor who described himself as an expert toxicologist, yet admitted that he had never worked on any bodies but the two in question.

The sum total of their evidence seemed to prove that HCN is not a poison at all, because they said they themselves had inhaled quantities of it without bad effect; that

"The presence of HCN was always to be expected in the lungs because lungs contain purines. One contains five atoms of carbon, five of nitrogen, and five of hydrogen. Therefore every lung will contain 5HCN."

After the hearing was officially closed, the experts produced the account of a forgotten experiment: they (said they) had built a small two-story house, placed some sick animals in the upper room and fumigated the lower room. The animals did not die; in fact, after a month, they were frisking about, entirely cured of their ailments.

"Such," said the Doctor, "is the kind of 'expert testimony' to which the court has to listen on many occasions. It would seem that alleged chemical experts and others can be found who will swear to anything on either side of any case.

"Before the Medical Examiner's office was instituted, I recall a case which cost the city \$30,000 of expert testimony (without any analytical proof) to prove that a certain man had died of chloroform. Now we can do an analysis for chloroform in about two hours; and the chemical analysis of an entire cadaver costs the city about four dollars.

"It is unfortunate that the people in this country expect a physician to know everything, just because he is a physician. Outside of Greater New York, only Boston and Newark, N. J., have an office like ours; other communities have the office of coroner, an appointment which unfortunately does not always go to the most deserving or capable man. Consequently, a coroner has been known to go to a death and put down the cause as heart failure because he was unable to determine the actual cause.

"County physicians, too, are often found wanting in such cases, because, though they may be wonderful physicians, they are not pathologists. This is the work of chemists, and physicians are usually not interested in chemistry."

In concluding his very interesting and unusual talk, Dr. Gettler stressed the great need for a medico-legal institute where men who are qualified to do work of this kind could add to their own knowledge, and teach others how to do it. His office, for instance, handles the work of the five city boroughs, and averages two thousand cases each year; his own assistants are only two undergraduate students who are gradually completing their courses for a degree. He hoped that New York University or Cornell might start such an institute, so that the invaluable work of a medical examiner's office could be extended throughout the country. He spoke in highest praise of the work of Dr. Mortland, of the Newark office.

A MEDICAL CHEMIST LOOKS AT PROFESSIONAL ETHICS

BY MAX TRUMPER, PH.D., F.A.I.C.

Résumé of an address to the Pennsylvania Chapter, February 6, 1931

Professional ethics cannot be established by a code drawn up by a board of trustees. It must be the product of slow-growing ideals accepted with the realization that their effective operation can be secured only through personal sacrifice.

Members of a profession maintaining a truly effective code of ethics must be willing to refuse those positions wherein they are not free to carry out the principles of that code. In the words of Shumaker, "If there is such a thing as a *profession*, as a concept distinct from a *vocation*, it must consist in the ideals which its members maintain, the dignity of character which they bring to the performance of their duties, and the austerity of their self-imposed ethical standards."

Should loyalty to the interests of the firm or institution employing the professional chemist be permitted to modify his loyalty to the ideals of his profession as summarized in its code of ethics?

The medical profession with its long established and highly developed code is finding its ethics tested anew because so many physicians are now employees of large corporations and have not the freedom of the general practitioner. Hitherto the ethical code of the medical profession has concerned itself with the relationship between physician and patient, physician and physician, and with the duties of the profession to the public. It must now study the problem of the physician employed by the large corporation whose position is somewhat analogous to that of the professional chemist similarly employed.

The actions of both physician and chemist must be governed by principles inherent in their professional obligations to their fellow men and colleagues. The superimposed obligations of an employee to his employer cannot, however, be overlooked and the ethical code of his profession should indicate to him his line of conduct.

Professional ethics is based upon fundamental principles and cannot be essentially altered to meet the demands of conditions arising out of economically created circumstances. The extent, therefore, to which these principles may be modified to meet the altered conditions involved in the relationship between the professional man and his employer, becomes a matter of serious moment if the ethical code of the profession is to remain inviolate.

ON ETHICS

BY KARL M. HERSTEIN, F.A.I.C.

The strength of The American Institute of Chemists is this: it recognizes that there is much more in the profession of chemistry than science and art. The profession of chemistry is made up of men and women living in the midst of a complex civilization, and having a specialized relationship toward that civilization.

The object of The American Institute of Chemists, as declared in its Constitution, is to bring about solidarity in the group of chemists and to advance the standing of the profession. The Institute seeks to obtain for the profession greater respect and recognition from the general public. The Institute thus wants something from the public for the profession.

For thousands of years men have agreed that what one gets for nothing is usually worth nothing. It follows rigidly, then, that the Institute cannot expect to obtain recognition, which is worth having from the public, unless some return is evidenced. And the chief return which can be made is to merit fully the confidence which the public is asked to give.

Thus, "enlightened self-interest" for the profession requires the maintenance of high standards of professional competence. But it is equally essential that with professional competence there be coupled a reputation for personal and professional integrity. Without both personal and professional integrity, public confidence will necessarily be lacking. But with them, public confidence and public respect will surely follow.

Consider the general concept of the professional engineer. He is the man in leather puttees who quietly directs from a blue-print the conduct of a large construction. But he is also the man who, in a neat business suit, stands across the table from the board of directors and in simple language makes them first visualize and then authorize new projects of immense scope. He has precisely the qualities which we may hold necessary for the chemists. The possible value of these qualities for the chemist may be judged from the esteem in which the engineer is held by the public.

In defining the basis of professional solidarity, it was noted that there must be a return to the public for the bestowal of respect and confidence. This proof places a moral obligation upon the profession, and a moral obligation involves effort. We must earn the reward we desire. Each one of us separately must restrain what might often seem immediate self-interest in favor of what consideration shows to be the best interest of the profession as a whole.

There may be times when for each of us that consideration demands some temporary sacrifice. Yet the ultimate advance of the profession as a

whole, entailing the ultimate advance of each member of the profession, will in the end more than repay any temporary loss.

With these ends clearly in view, the Institute has framed its Code of Ethics. This Code has no direct legal force. Its acceptance by the Fellows of the Institute is purely a voluntary matter. Yet consistency requires that while Fellowship in the Institute is retained its Code of Ethics be constantly in mind as a daily guide to action.

And not only is this course desirable for the general advancement of the profession, but it also will serve to enhance what distinction may be attached to a Fellowship, setting Institute members apart from those who are not eligible for membership, or who have not applied for admission.

There is still another gain to be made by strict observance of the Code. That lies in personal self-satisfaction. After all, we live and work to obtain happiness. And there is much happiness in the knowledge that every act of a professional career has been in accord with the highest standards of professional practice, the best interests of the profession, and the rules of Ethics.

REPORT OF THE LICENSE COMMITTEE

BY WILLIAM M. GROSVENOR, *Chairman*

Digest prepared from the Committee's formal report

At the last meeting of the National Council, on February 27, 1931, a report was received from the committee which has been investigating the various State Registration or Licensing Laws, as already applied to other professions, and the prospects of the passage of similar laws applying to chemists. The report indicates a number of things of general interest to the members of the Institute and some respects in which they can be of assistance to the committee in its work.

In the first place, the committee finds that few chemists have given the question of licensing any serious consideration. The vast majority merely "feel" on the subject because they haven't thought. This applies about equally to those who favor it, those who are indifferent, and those who are opposed to it.

In the second place, most chemists apparently assume that licensing is something one has to ask for or invite, and that one's objection to it, at least as long as the objectors constitute a majority of the class involved, insures immunity from any such restriction.

Of course, the law may in fact be proposed by anyone who thinks he has any kind of purpose to serve—from picking up a little loose change for the State Treasury, down to venting a personal spite, or up to protecting an innocent public from fraud. And equally it may be passed because it may help to fill some small corner of a deficit or make an extra "job," because it is proposed by some whom most of those voting do not care to antagonize, because it is hoped to prevent fraud, or just because the weather is hot and nobody cares. The popular vote which may possibly control legislative action might be altered to the extent of one-tenth of one per cent by the votes of all chemists and the families solidly united. The preference of chemists themselves is perhaps the least important of all factors either for or against licensing.

In the third place, apparently most chemists, to a greater extent than the various kinds of engineers have some ingrained prejudice against licensing—"like the push-cart vendors and the dogs," as they put it. They say it is not dignified or professional. They seem to forget that the two most dignified, respected, and influential professions (law and medicine) are licensed and have been licensed longest; also that three professions ascribe much of their success as well as prestige to license restrictions, and were almost helpless in their efforts to raise standards of education and to punish even the most flagrant malpractice without license laws.

The fourth general class of fact developed is that enforcement of a code of ethics in unlicensed professions has repeatedly been tried by the professional society itself, and has proved an utter failure for obvious reasons. One is that members of an Ethics Committee cannot be expected to act fearlessly and incur the risk of individually having to bear the inconvenience and expense of suits for defamation of character and damages by some possible cornered and desperate offender who may have some means and object to having the source of supply dried up. Only the members of a Federal or State Board acting as officials of the people, can act impartially and fearlessly.

Fifth, to be effective, the Institute must first acquire a reasonably uniform body of well-grounded, carefully thought-out opinions on the subject, based on the experience of the older and better organized professions, revised in the light of their shortcomings and modified to suit our profession. We should, as far as possible, develop sound opinions on the license question in other representative members of our profession, whether Institute members or not.

Sixth, experience of other professions appears to show: that in any license law, the provisions for administration of the law are the most important features; that opposition by the profession involved makes proper provisions for its administration almost impossible; and that the step-by-

step improvement of licensing statutes which are originally poor is a slow, difficult, and uncertain procedure.

The Committee, therefore, advises that the members of this Institute as individuals should intelligently and without prejudice consider and discuss the license question among themselves at section meetings, and among other chemists and professional men, with a view to developing sound opinion and eliminating mere prejudice on this question. One way or the other, sooner or later it is going to be of great importance to the chemical profession as a whole, and to individual success.

The committee advises that, whether for or against licensing, this Institute in particular, and even the chemical profession in general, is probably too small in numerical votes and too limited in financial means to be able effectively to control or even guide legislation solely by direct action.

By general and impartial study and discussion, the Institute can undoubtedly secure the co-operation and assistance of the vastly larger, better organized, more experienced professions such as the American Bar Association and the American Medical Association. To do so, however, we must be able to present a substantially uniform and solid front ourselves, must know just where we want to go, and be able convincingly to tell why.

Until such preliminary work has been done, above all, until the members of this Institute are reasonably harmonious in opinion on the subject, and until our membership either greatly increases in number and representative standing in the industry, or has developed a general co-operative sympathy among other chemists and professional men, it is the opinion of the committee that no uniformity of law is practicably attainable; and poorer forms of law would be the only consequence of agitation either for or against State licensing at this time.

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ACKNOWLEDGED WITH THANKS

Calm Hoke thought you would be interested in this little insight into the licensing problems of some of our professional brethren:

Their Heads in the Sand

Engineers often are charged with being impractical, too deeply absorbed in the contemplation of abstract theories to concern themselves with the actual working out of their theories or to care whether the theories have any real application. A good example which tends to support this charge is the recent action of the board of directors of the *American Institute of Mining and Metallurgical Engineers* on the licensing of engineers, action which has just come to notice in connection with the organization of a joint committee on revision of the license law in New York State.

Last winter the board, after a restudy of the matter of licensing, reaffirmed the attitude which it took back in 1922. It sees no necessity for licensing engineers in its field, and as a consequence it hopes that local members when consulted in regard to license laws will urge that mining engineers and metallurgists be exempted from such laws. In other words, the board, following the lead of the ostrich, having in 1922 stuck its head in the sand, decided in 1930 to keep it there, trusting to Providence that the same agency which kept it from losing its wings last winter will keep it from losing its neck the next time that licensing matters are tossed up and blown about in the winds of legislation.

The agency which last winter kept the mining profession from losing its wings in the legislative storm in New York State was a joint committee of the other engineering professions. At that time there developed a concerted attempt to write a citizenship requirement into the engineers' license law. The civil, electrical, and mechanical engineers saw in this citizenship requirement the risk of retaliatory legislation in other countries. If this country refuses to let foreign engineers practice here, other nations will be quick to set up a similar restriction against American engineers. And who is more deeply interested in pushing his quest for work into foreign fields than the mining engineer! But is the board of directors of the mining institute interested in keeping a license law from becoming a potential source of restriction upon the freedom of its members? Of course not. The board believes the licensing of engineers to be wrong in *theory*. It cannot, therefore, consistently take any action upon a license law which has gone beyond the theoretical stage and become an *actuality*. Other engineers may discard their theories in the face of realities but not the board of directors of the American Institute of Mining and Metallurgical Engineers!

The case of the board of the mining institute is cited here because it is the most outstanding example of a not uncommon attitude of mind. Other branches of the engineering profession are well supplied with individuals who similarly choose to imitate the ostrich when licensing looms up on their horizon. They did not favor licensing when it was under discussion as a theoretical consideration and so they refuse to take any hand in improving license laws which have since been written upon the statute books of many of our states despite their protestations. As a result, the burden of eliminating the faults which exist in almost all of our state license laws has fallen upon the shoulders of a few men. They need and would welcome the counsel of their fellows. Moreover, because of this apathy on the part of a large number of engineers, little thought is being given to the broader questions which license laws have raised. For example, little consideration is being given to whether blanket licensing of all engineers under one title is necessary, or whether the demands of public safety would be adequately satisfied by the licensing of only those engineers whose work directly affects the public safety. This and like matters need the thoughtful consideration of men who are willing to study the actual working out of license laws. They never will be properly considered so long as many engineers prefer to keep their heads buried in the sand.—*Engineering News-Record*

The following excerpt from the 1930 Report of the President of Columbia University is reprinted here by permission of the President's office.

Must Science Go the Way of the Classics?

It is hard to imagine anything more sad than the decline and fall of classical scholarship and classical teaching in American education, with the resultant paralysis in the development of our national understanding and our national cultivation. The changed conditions of life and of knowledge being what they are, it would have been quite impossible under any circumstances, as well as unwise, for the ancient classics to maintain their one-time dominance of the best type of secondary school and college education. An appropriate readjustment of their place in the educational program would, however, have been something very different from the substantially complete downfall which has overtaken them. The Greek language and literature, Greek history, Greek eloquence, Greek philosophy, and Greek institutional life, a knowledge of all of which is a *sine qua non* to an understanding of the intellectual and the spiritual life of today and to preparation for full participation in that life, have passed quite outside the range either of knowledge or of interest of the present generation of American students and their teachers. Latin, which bade fair to travel the same road, has been checked somewhat in its decline, but nevertheless its situation is parlous in the extreme.

The effects of all this are apparent on every hand. They reveal themselves in a lack of historical knowledge and perspective, in a lack of acquaintance with what is the

very best and most fruitful of human experience, and in a lack of understanding of the significance of those literally colossal achievements of the mind and spirit which made ancient Greece and Rome immortal, no matter what fate may befall their history, their literature, and their institutions as elements of an educational program. With all these have come also increasing carelessness of good manners and a sorry lowering of literary and artistic standards.

This decline and fall, it must be admitted, has been hastened and made certain by the attitude and influence of a host of those who were themselves teachers of the classics and who were engaged in the promotion of classical scholarship. They saw fit to supplant understanding of the ancient world with a myriad of minutiae of highly specialized learning, and to push far into the background the vitally important art of interpretation which is the essential element of real teaching.

Following the remarkable series of discoveries which began something more than a hundred years ago and which absorbed the attention of classical scholars in Germany, in France, more or less in England, and increasingly in the United States, the classical teacher too often left off the useful task of exposition and interpretation and became a highly specialized research worker in some narrowly bounded field of philology, of epigraphy, or of archaeology. Into academic recesses such as these naturally no considerable company of students could possibly follow. Classical studies became identified in the public mind with this sort of minute and highly technical knowledge, and they rapidly lost their commanding and inspiring position as the seat and center of the study of humane letters. So it came about that in time classical studies in the schools and colleges of the United States were first asphyxiated, then embalmed, then incinerated, and finally placed in well-decorated funeral urns in the academic columbarium by those who should have been their glad and eager companions, exponents, and interpreters. Minute technical studies had been substituted for literary and aesthetic appreciation and interpretation. When that happened the end was in sight. If there is ever again to be a genuine revival of classical learning—and nothing would more help and uplift American education and American life—it can only follow upon the influence of a group of scholars who are inspired by the ideals at which Greek and Roman art and letters aimed, and who are endowed with a capacity to interpret these in terms to be understood in the light of the world of today. Now and again there is a flash of lightning against this darkly clouded sky that comes from the direction of Oxford or Cambridge or Scotland or France or Italy, but it must be confessed that these moments of illumination are few and far between.

Strange as it may seem, the academic subjects whose rise contributed powerfully to pushing the ancient classics into the background appear now to be themselves in danger of coming under the influence of forces wholly similar to those which have destroyed the prestige of the ancient classics and any considerable knowledge of them. The natural and experimental sciences are of fascinating interest to every one who aspires to regard himself as an educated man. For some four hundred years the subject-matter of these sciences has been steadily and rapidly expanding, and as scientific method has increased its power of penetration and multiplied its capacities the world about us has yielded one amazing secret after another until today the limits of scientific knowledge are measured only by the distance from the incredibly vast to the inconceivably small. Earlier and apparently well-established divisions of scientific territory are steadily disappearing. No one can longer tell where physics ends and chemistry begins, and now biophysics has come into existence to burrow through the wall which has separated physics from biology. Mathematics, the earliest tool and instrument of abstract thought, then long regarded as little more than a curious method of playing with the

symbolic and the unreal, has reasserted itself at the hands of Einstein as the clue to the structure and fundamental laws of the physical universe. The whole round world has become the playground of the mind. Hypothesis quickly leaps into demonstration and demonstration then with lightning-like rapidity becomes the foundation of new and strange superstructures. To be ignorant of all this, or to be careless of it, is to put oneself outside the pale of that kind and wealth of understanding which are essential to liberal education.

Nevertheless, there are not wanting signs that teachers and research workers in the field of natural and experimental science may yet do for their favorite knowledges precisely what the teachers of the ancient classics have done for an understanding of the life and literature of ancient Greece and Rome. Today if the university student wishes to make himself a specialist in any one of the various fields in which science presents itself to him, the largest ability, the widest knowledge and the most splendid laboratory equipment are at his service. He may quickly be drawn and pushed into the secret places of physics, of chemistry, of biology, of geology, of astronomy, or even of mathematics; but how fares it with him who, not wishing to become a specialist in any of these fields, seeks for accurate and inspiring understanding of what all this scientific discovery and progress is about? Too often he asks for the bread of interpretation and is given only the stone of minute experimentation.

It would indeed be a cruel fate if the natural and experimental sciences, after their full half century of increasing educational dominance and with their quite unlimited educational possibilities, were now to be sent the way of the ancient classics, and should come to be generally used and known only in their applied and technical aspects, primarily for economic reasons and from motives of gain.

"O, what a fall was there, my countrymen!"

If the natural and experimental sciences are to escape this fate, those who teach and who represent them in the academic life of the world must be able to follow the example of a Huxley and a Tyndall, of a Helmholtz and a du Bois-Reymond, of a Pupin and a Millikan, of an Eddington and a Jeans, and those like-minded and like-spirited with them, who can and will interpret the facts, the findings, the methods, and the lessons of the natural and experimental sciences to that multiplying host of intelligent men and women who seek a liberal education in the true sense of that term. Narrowly limited specialization between mounting walls of closely restricted interest, knowledge, and skill will not do. That way lies the path to the academic graveyard.

J. N. Taylor sent the following, which might raise the question of whether scientific workers belong to a trade, a profession, or a Mutual Aid Society.

The Profession of Science. By Sir Richard Gregory, Professor Julian Huxley, and others, being a brochure drawing attention to the advantages of membership of the *Association of Scientific Workers*, 55 Victoria Street, London, S.W. 1. Among the various benefits enumerated we note the following: "An agreement with a large furnishing company provides for a substantial discount to members of the Association," and "A tailoring firm, world famous for style and quality of workmanship, has agreed to give members a discount of 10 per cent."—*Chemical Trade Journal and Chemical Engineer*

THE NATIONAL COUNCIL

The seventy-eighth meeting of the Council of The American Institute of Chemists was held at The Chemists' Club, 52 East 41st Street, New York, N. Y., on Friday, February 27, 1931.

President Dr. Frederick E. Breithut presided. The following councilors and officers were present:

Messrs. Henry Arnstein, E. F. Cayo, M. L. Crossley, W. M. Grosvenor, J. F. X. Harold, K. M. Herstein, H. S. Neiman, Allen Rogers, F. W. Zerbán, F. W. Zons.

Mr. Frederick Kenney, Chairman of the New York Chapter was present.

The minutes of the previous meeting were approved as submitted.

The Treasurer's report, as of February 27, 1931, was read, showing cash balance as \$2,779.08 and accounts receivable as \$530.17, with all bills being paid to date.

Dr. Grosvenor reported upon licensing for the Committee on Legislation. Dr. Grosvenor also reported upon the subject of a uniform chemist employment contract. Upon motion duly made and seconded the following resolution was unanimously adopted:

WHEREAS, a considerable expense is incident to the preparation of a uniform employment contract, and

WHEREAS, the funds of the Institute are insufficient for such purpose

Therefore, Be It Resolved, that the Committee on Legislation be requested to communicate with the industrial corporations, requesting them to forward copies of their standard forms of contracts with chemists in their employ, with a view to the formation of a uniform employment contract for chemists.

The Secretary presented a letter dated January 17th, from Franklin D. Jones, Chairman of the Pennsylvania Chapter, relative to two resolutions passed by the Pennsylvania Chapter. This letter was referred to Messrs. Cayo, Arnstein, and Jones for a more detailed report to be submitted to the next meeting of the Council.

The Secretary presented a letter from L. Elgaard relative to requested information regarding carbon-dioxide and the Secretary was directed to refer the letter to Dr. Henry Arnstein, Dr. D. H. Killeffer, and others.

The application of Samuel M. Weisberg to be raised from Associate to Fellow was accepted and the applicant was elected to Fellowship.

The names of those elected to membership are on page 207.

There being no further business, on motion duly made and seconded, adjournment was taken.

—H. S. NEIMAN, *Secretary*

February 27, 1931

ELECTION BALLOT

The returns from the preliminary ballot were submitted by the tellers as follows:

For Councilor, term expiring 1932 (one to be elected):

Arthur E. Hill *or* Lawrence V. Redman

For Councilors, term expiring 1934 (three to be elected):

Allen Rogers	Lawrence V. Redman	Frederick W. Zons
Frederick W. Zerban	Arthur E. Hill	Frederick Kenney

CHANGES OF ADDRESS

ROBERT A. BUCHANAN, JR. (*p.* 72): Send mail to permanent home address, 228 Tokay Street, Lodi, Calif.

CLAIR CATHERMAN (*p.* 73): Send mail to 441 Second Street, Ann Arbor, Mich.

ISABELLE D. COLLINS: Home address: 338 McCoy Avenue, Campbell, Calif.

ALLEN E. LAWRENCE (*p.* 94): Send mail to new home address, 1110 Shallcross Avenue, Wilmington, Del.

ERNEST J. MANFREDO (*p.* 97): Correct home address, 21 Grove Street, New York, N. Y.

WALTER WILLIAM PLECHNER (*p.* 105): Change home address to 605 59th St., Brooklyn, N. Y.

JOHN E. SCHOTT (*p.* 111): Change mailing address to 901 Woodycrest Ave., New York, N. Y.

CHESTER A. A. UTT (*p.* 117): Send mail to business address.

M. G. WEBER (*p.* 119): Change mailing address to P. O. Box 1977, Orlando, Fla.

NEWS OF THE CHAPTERS

New York

The fifth regular meeting of the 1930-31 season was held at The Chemists' Club on the evening of Friday, February 6th. Following the dinner, which was served in the main dining room of the Club, Dr. Alexander O. Gettler, Chief Toxicologist for the City of New York, was introduced as the speaker.

Dr. Gettler's subject was *The Chemist and His Relation to Medico-Legal Work*. He spoke from a background of experience in the field of medical and chemical jurisprudence, which has involved many years and thousands of diverse and interesting cases. Dr. Gettler's department handles the laboratory investigation, recording, and expert testimony work, involved in the consideration of some three thousand analyses per year. The subjects of the analyses are cadavers, or organs of the deceased, and the motivating cause of the work is to assist the medical examiner in his determination of cause or responsibility for death.

It will be understood that the speaker's presentation included the chemical problems of analyzing, to determine any and all poisons causing death—specifically, as in criminal actions, and generally, as in accidental cases of asphyxiation, food poisoning, and poisoning through occupational hazards. The

talk was made especially direct and valuable because of the extensive exhibit which supplemented discussion of diverse problems.

Generally considered, the address of Doctor Gettler was experienced, professional, and poignant, and constituted a very valuable contribution to the audience in general, but particularly to those who are called upon to make referee analyses, and to give court testimony.

Dr. Jerome Alexander discussed Doctor Gettler's paper and cited some interesting aspects of the embalming profession in its contact with the medical examiner's office, and as an allied agency for crime detection.

Mr. Frederick Kenney, Chief Chemist of the Department of Purchase of the City of New York, as Chairman of the New York Chapter, presided. He urged upon the audience the polite necessity of sending in the convenient return postcards anent meeting attendance, so that the officers could secure, in advance, Club quarters most adequate to the comfort of those attending each meeting.

There were present about seventy members and guests.

The meeting adjourned at 10:00 P. M.

Respectfully submitted,

LEON V. QUIGLEY, *Secretary*

Pennsylvania

The regular meeting of the Chapter was held on February 3, 1931, at the Engineers' Club.

Mr. Cayo reported on the proceedings of the Council Meeting.

Saturday afternoon, March 7th, was chosen for the next meeting, which will be a tour through the Art Museum.

A nominating committee, for officers for the next year, was appointed, consisting of Fellows Lukens, Arnstein, and Bertolet.

Fellows Chapin, Berry, and Kilpatrick were appointed as a committee on membership.

Dr. Trumper addressed us on the subject *A Medical Chemist Looks at Ethics*.

Dr. Lukens suggested that a recommendation be made to the Council, offering the services of the Institute to the American Medical Association, to draft a code of ethics governing chemists and industrial physicians.

Dr. Kilpatrick suggested that a member of the Institute who changes his vocation be placed on an inactive list and if he should again engage in professional work, that he be reinstated. A motion was made to refer this to the Council.

The meeting was adjourned at 10:30 P. M.

Respectfully submitted,

BENJAMIN LEVITT, *Secretary*

Washington

The regular meeting of the Washington Chapter was held in the Board Room of the Cosmos Club, on February 27, 1931.

The meeting was called to order at 8:15 P. M., with Chairman Lynch presiding. Twenty-nine members and guests were present.

Chairman Markwood of the Reclassification Committee reported that his committee had completed its work as far as it was possible to do so at this time.

A committee was appointed by the Chair, to complete the file of *The CHEMIST*, usual form consisting of O. E. May, *Chairman*, Mehring and Merz.

The chapter was addressed by Mr. Ismar Baruch, Assistant Director of the Personnel Classification Board. Mr. Baruch explained the machinery of the Board and asked that the Institute co-operate with the Board in making a survey of the work of chemists in the Federal Service with a view to defining the work required in the different grades with more precision. Accordingly, the Chair appointed the following committee: Markwood, *Chairman*, Couch, Knight, Herrick, Merz, Shorey, Mehring, and May. Considerable discussion of various problems connected with the reclassification act ensued. Mr. Baruch was given a rising vote of thanks by the Chapter for his splendid talk. On motion, the meeting adjourned.

O. E. MAY, *Secretary*

PERSONALS

DR. JOHN J. ABEL has been chosen as the protagonist of the second of the sound films which are being planned by the chemistry department of the Johns Hopkins University with the idea of preserving the accomplishments and the intimate personality of the great scientific minds of the nation. (The first sound film features Dr. Robert A. Millikan.)

MARSTON T. BOGERT lectured recently on *Recent Progress in the Perfume Field*, at The Johns Hopkins University; and on *Perfumes, Natural and Synthetic*, before the Scientific Association of Middletown, Conn.

BENJAMIN T. BROOKS talked on March 17th on *The Chemical Aspects of Petroleum Origin* before the American Society of Petroleum Geologists at Fort Worth, Texas.

CLAIR CATHERMAN, of Poland, Ohio, has registered for post-graduate work at the University of Michigan.

ARTHUR E. HILL of New York University, recently lectured before a group of visiting alumni on the subject *Has Chemistry Changed or Have I?*

HORACE T. HERRICK, Principal Chemist in charge of the Color and Farm Waste Division of the Bureau of Chemistry and Soils, Washington, spoke on *The Development of Chemical Application of Micro-organisms*, before the faculty and graduate students in chemistry at Yale University.

HENRY G. KNIGHT, Chief of the Bureau of Chemistry and Soils, spoke to the Association of Southern Agricultural Workers in Atlanta, February 4th and 5th, on *The Future Land Policy of the United States*, and also upon new processes of fertilizer manufacture, developed by the Bureau. Dr. Knight started, February 16th, on a three weeks' inspection tour of the soil erosion and soil fertility work of Bureau and State experiment stations, mainly in the middlewest and northwest.

CHARLES A. KRAUS lectured before the Franklin Institute of Philadelphia on *Solutions of Metals in Non-metallic Solvents*.

ORVILLE E. MAY, Secretary of the Washington Chapter recently spent a day in the laboratories for cancer research at Philadelphia, in connection with the work now being carried out there on glycolysis in cancer cells.

J. DAVID REID, Junior Chemist of the Color and Farm Waste Laboratories, has been appointed reporter for the Washington Chapter.

FLORENCE E. WALL addressed the Technical Association of the Fur Industry on *Hair Dyes and Dermatitis in Hypersensitive Individuals*; and the Chemistry Club of Hunter College on *Opportunities for Women in Professional Chemistry*.

DAVID WESSON addressed the Rotary Club of Brockton, Mass., on *The Uses of Cotton Seed*.

EMPLOYMENT NOTES

Bureau of Employment of The Chemists' Club

The Bureau of Employment of The Chemists' Club, New York, which has been co-operating with The Institute by listing vacancies which might be of particular interest to Institute members, is at present being re-organized, with a view to increasing its facilities.

The committee in charge of the Bureau consists of Charles R. Downs, F.A.I.C., Chairman; C. O. Brown, Vice-Chairman; Nelson Littell, John A. Chew, and Frederick J. Kenney, F.A.I.C.

D. H. Killeffer has been appointed manager of the Bureau. Forthcoming issues of *The CHEMIST* will carry regular announcements of its activities, and it is hoped that Institute members will co-operate with the Bureau in its efforts to serve as a clearing house of information, on technical positions of all kinds, and on the persons best qualified to fill them.

Opening for Specialist

CB-560-1: CHEMIST ON PAPER BOARD; Middle West; \$4,000.00. Should be graduate of good engineering school and positively must have had experience in the manufacturing of paper board. Paper pulp men will not be considered unless they have had this paper-board experience. Communicate with Institute Secretary.

CHEMIST WANTED: Large manufacturer of insecticides needs a research testing chemist with special experience on insecticides. Communicate with Institute Secretary.

Positions Wanted

- 11X30 Graduate Chemist, 3 years' teaching experience, wishes position in research work or analytical chemistry.
- 11Y30 Graduate Chemist, 4 years' experience in analytical chemistry, metallurgy, and metallography, wishes position.
- 11Z30 Graduate Chemist, experienced in pharmaceutical and food chemistry, wishes position.
- 2X31 Chemist, thoroughly experienced in malted milk business, and allied food industries; available now.
- 2Y31 Ph.D. in Biochemistry, experienced in research on food products and fermentation; available in June.

UNITED STATES CIVIL SERVICE EXAMINATIONS

Position	Salary	File application by
Associate Soil Technologist	\$3200-3800	April 8, 1931
Assistant Chemist (Coal carbonization)	\$2600 up	April 8, 1931
Junior Microanalyst	\$2000-2600	April 21, 1931

THE NEW MEMBERS

Fellows

- | | |
|---|--|
| LEO FREUNDLICH, Chief Chemist, Runkel Brothers, 451 West 30th Street, New York, N. Y. | MARSHALL J. GOSS, Associate Chemist, Bureau of Chemistry and Soils, Department of Agriculture, Washington. |
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CHARLES LYMAN RAND, Director of Research, Mitchell Rand Mfg. Co., 18 Vesey Street, New York, N. Y.

Associates

- | | |
|--|--|
| RUBIN H. FEINGOLD, Chemist, Department of Health of New York City, Foot of East 16th Street, New York. | JOSEPH JAMES STUBBS, Junior Chemist, Bureau of Chemistry and Soils, Color and Farm Waste Division, Washington. |
|--|--|

Juniors

- | | |
|--|---|
| FRANCIS XAVIER KOBE, Student, University of Dayton, Dayton, Ohio. | HARRY WAGREICH, Member of Teaching Staff, College of the City of New York, 140th Street and Convent Avenue, New York, N. Y. |
| ALVIN WILSON UNDERKOFFLER, Student, Juniata College, Huntingdon, Pa. | |

APPLICATIONS FOR MEMBERSHIP

Fellows

- | | |
|---|--|
| FRANK ANTHONY DEMELFY, Research Worker, Philadelphia College of Osteopathy, Philadelphia, Pa. | IRVING D. POLLAK, Chemist, Department of Purchase, City of New York, 480 Canal Street, New York, N. Y. |
|---|--|

ALOIS X. SCHMIDT, Chief Chemist, Durkee Famous Foods, Inc., 80 Corona Avenue, Elmhurst, L. I.

Associates

- | | |
|--|---|
| JOSEPH BURWELL FICKLEN, III, Chemical Engineer, Travelers Insurance Company, Hartford, Conn. | BERLIN CARSON FRENCH, Instructor in Chemistry, Juniata College, Huntingdon, Pa. |
|--|---|

WILLIAM LEE HILL, Assistant Chemist, Bureau of Chemistry and Soils, U. S. Department of Agriculture, Washington, D. C.

Juniors

- | | |
|---|--|
| NATHAN BIRNBAUM, Fellow in Chemistry, College of the City of New York, 140th Street and Convent Avenue, New York. | DOUGLAS JOHN HENNESSY, Instructor in Chemistry, College of Pharmacy, Fordham University, New York, N. Y. |
|---|--|

KENNETH LEE JENNINGS, 207 Amanda Street, Clyde, Ohio.

THE MEMBERS' FORUM

This department is intended for the frank discussion of Institute activities, published articles, etc. Your co-operation in helping to make it a success will be some evidence that chemists are not quite so inarticulate as is commonly supposed.—EDITOR

Is the Practice of Chemistry a Profession?

The above question was asked on *The President's Page* in the January issue. If the older concept of the term be used, the answer must be in the negative. Admittedly, only a small proportion of chemists are engaged in lines of work wherein they can render service directly to individuals.

On the other hand, even in the so-called recognized professions, there is a strong and increasing trend from individual service to corporate service. This movement as it affects engineers in general has been commented on in the article by W. E. Wickenden in the *Engineering News-Record*, quoted by Dr. Arnstein in the January issue of *The CHEMIST*. The tendency of medical specialists to accept permanent connection with clinics, institutes, etc., is noticeable. The degree of saturation of the legal profession with personnel is said to be such that the beginner usually prefers a small corporation job at low pay to the precarious prospects of independent practice, and that there are furthermore, too few such jobs to go around.

When it is remembered that the ultimate result of the work of the chemist is service to the people as a whole, there should be no hesitancy in assigning to chemistry its true status. The chemist should suffer no loss of prestige simply because he, to a greater degree than other professional men, finds his work expedited by the advantages of permanent contact with a corporation having progressive management and adequate financial resources.

This does not mean that "a graduate in chemistry has attained the heights of success when he can cry out triumphantly, in the language of the correspondence school advertisement, 'I got the job!'" There are those, possibly, who regard a "job" as an end in itself—a comfortable "position" in which one is supported by a sort of pension. This attitude, where it exists, is damaging not only to those who adopt it but also to the profession as a whole. The true professional spirit demands that the making of a connection be considered not as an end but as a beginning—a preliminary to the rendering of a service which constitutes a fair exchange for the compensation received.

P. O. Box 271, Wharton, N. J.

C. G. DUNKLE

TO THE EDITOR OF *The CHEMIST*:

At first glance, the statement quoted from the address of a speaker at an Institute meeting—that "ninety per cent of chemical research is destructive of capital"—may sound acceptable. This cursory glance might embrace fields known only by hearsay, but closer attention directed toward the results of personal experience may cause a reasonable doubt.

Further, that chemists who are responsible for the net increase of many hundreds per cent investment in chemical industry during the last twenty years have been influential enough to destroy capital in that ratio, seems incredible. The following examples which appear to confute the generalization are offered for your consideration:

Until 1917 the Chilean nitrate mills found it unprofitable to work ore of less than eighteen per cent nitrate. Their waste contained thirty per cent of this and vast *ripió* (waste) dumps averaging six per cent nitrate filled the valleys close to each mill. The material was semi-colloidal and no means were available to recover this loss. Work be-

gun in 1916 on a method to filter and wash "fines" culminated in 1917 in the first increase in capital due to research. The recovery plant, then installed, took the waste from the mill and converted eighty per cent of the loss into a profitable product. Increase in capital has steadily progressed. Today the old *ripio* dumps are being worked as profitably as new deposits, but the old mills still operate. The net result has been a great increase in capital investment and in the form of added value (in *ripio* dumps) increase in capital reserve.

A few raw sugar plants are located where they have an outlet for refined sugar. Research developed a process which will produce refined sugar direct from cane. The company which developed it invested well over a million dollars, and today sells refined sugar locally, saving the consumer the cost of freight in two directions and making more than the differential usually made by the refiner. Its raw sugar plant still operates at capacity. The refiner has not been hurt, for a new market has been created. Natives long accustomed to raw sugar now demand refined. The net result is decidedly an increase—not a destruction—of capital.

Obsolescence due to research does occur in sugar plants, but American manufacturers, ahead of competitors, have off-set this. Many Scotch mills of ancient vintage still operate as efficiently as when new, and their manufacturers claim they will last forever. Perhaps. But they require forty pounds more steam pressure than new mills, and their waste is more than thirty per cent greater. The American machine is built lighter; it costs less, and pays for itself sooner. Its life may be little over fifteen years, but by then research has made an old mill costly to retain in service. This obsolescence cannot be considered destructive of capital, however, for a good accountant will have written it off the books long before it is due for the scrap heap.

Very recently we have developed a new cooking process in the paper industry. Raw jute or rope is prepared for the beaters continuously in a cycle of thirty minutes. This replaces an intermittent process requiring from seven to fourteen hours. The ultimate results of this research are not yet apparent but the company which adopted it has increased its investment, used its old machinery for other purposes, and thus increased its capacity. There certainly has been no destruction of capital.

Before accepting the verdict that ninety per cent of research is destructive of capital . . . a detrimental charge, indeed! . . . it would be well for research chemists to review their work. Undoubtedly they will find many examples, which point as definitely as the above to a different conclusion.

Industrial Research Company,

W. J. BAÉZA

New York City, March 10, 1931.

TO THE EDITOR OF *The CHEMIST*:

About five years ago, at the meeting of the Institute in New Haven, there was a symposium on contracts, several papers having been read by prominent members.

I am wondering what happened to the conclusions that were reached as a result of this meeting.

With the ever increasing development of the chemical industry, the importance of contracts to the individual chemists is becoming greater each year.

Why should our National Council not adopt some procedure for definite action in this matter, through a Committee, so that the members affected may receive some definite information and help to guide them in such matters?

Other members of the Institute may have some ideas on the subject, and *The CHEMIST* is the place for them to express themselves.

50 East 41st St., New York, March 10, 1931.

D. D. BEROLZHEIMER

EDITORIAL

What Price Analysts?

As an entirely gratuitous idea for some qualified chemist who can find the time, we hope that someone, some day, will assemble a burlesque text on chemistry, made up of choice bits culled from the public press, examination answers, graphite-cellulose analyses, etc.

The chances are that such a book would do no particular good, because it would be read only by chemists with spare time, if any; or quoted by poor hard-working teachers who need Horrible Examples to help them drive a point into resistant heads.

Well, what of it? If only one person here and there could be made to appreciate the potential harm traceable to dabblers who "know only enough chemistry to be dangerous," something might be accomplished toward protecting the public against their activities.

Many instances come to mind. An outstanding case is that of a would-be "chemist" who wanted "all the tests usually undergone and how to do them, or literature covering the field of cleaning up on alcohol beverage analysis. . . In other words exactly what it takes to do this work correctly."*

Another instance, more recent, which received editorial comment in some of the journals under the caption *Believe It or Not*, has to

do with the analysis of "ferrie-aluminic conglomerate ore." According to the alleged analyst to whom the work was entrusted, the ore consisted of aluminum, chemically combined with silica and chromium, cobalt, nickel, manganese, and iron. These, plus glucine, are listed in a table of Percentages of Organic Elements (grand total, 3.61); and the following paragraphs are thrown in free of charge:

"We seldom comment on the value of mineralized ore unless there is some special characteristic to which the analysis has drawn our attention.

"In this case the footings of the analysis show that pressure and volcanic heat have a cement and alloy welded to the content of the rock which render the ore a transitory vehicle for the elements already selected and proportioned for a valuable hardener for copper, aluminum, manganese, and iron in the making of the hardeners of steel."

In *Mining and Metallurgy* for October, 1930, to which this report was originally sent, there was little comment beyond the observation that "If ores are being turned into 'transitory vehicles,' the motor market is likely to suffer."

But *Industrial and Engineering Chemistry* for February, which reprinted the complete report, took it more deeply to heart. To wit:

"Upon inquiry we learn, as was to be expected, that the 'analyst' has no professional standing in his community, and

* The CHEMIST, May 1929, page 4.

it is hard to understand why anyone would utilize his services. Perhaps it goes to show that our campaign to obtain a better appreciation and understanding of what chemistry is and can do is worth stimulation. We cannot expect ever to bring all men to display discrimination when choosing scientific advice, but there should be some way of making it difficult for the sort of workman whose results are reported here to do mischief. Licensing does not do it, since some of the professions where the greatest care is exercised harbor the best examples of harmful imposters. Another way must be found."

To which we add that this way can be found by and through such an organization as The American Institute of Chemists! Explaining and stressing the importance of what the *chemist*, rather than *chemistry*, is and can do, is one of the principal reasons for the existence of this organization.

It seems to us that the public is sometimes unduly exposed to all the wonders, the fascination, and the glamour of chemistry *per se*. In fact it may be largely due to the zeal of those who wish to instill this knowledge into the kindergartens, play schools, and home kitchens by means of their "Chemistry Sets for Children; \$3.98 and up," that pseudo-chemists slip into places from which they can attack the purses and trusting confidence of the chemistry-conscious public.

Chemistry, they all know, can reveal all the secrets usually hidden from the lay mind; anyone who claims to practise chemistry must have this awesome power at his command; therefore anyone who

calls himself a chemist, or maintains a place where he can conduct experiments and tests of sorts must be as good as anyone else who claims to do the same work.

An organization like the Institute, which is primarily interested in the professional activities of *chemists*, can rightfully be expected to assist in setting the public straight on who is and who is not qualified to practise the profession of chemistry. With strict qualifications of education and experience, the Institute has at least something by which standards may be gauged—a worthy start toward weeding out incompetents and the half-baked analysts, bootleggers' assistants, and others whose chief assets may be no more than a smattering of technic, some trade patter to use for language, and a wise expression.

To relegate the question of licensing for the reason cited above, hardly settles it. Granted that mistakes may have been made by other groups who have adopted the licensing system, the Institute has all the chance in the world of bettering these experiences by carefully studying the causes of those very mistakes, and recommending to the licensing authorities the means for avoiding them.

The best means of disposing of incompetents is by turning the light of publicity on their shortcomings. The public press of today is usually only too glad to expose fraud, and the Institute can help to protect the public by calling atten-

tion to flagrant—or even trivial—cases of inefficiency or incompetency.

So, when, as, and if, and even whether or not, we should ever see the suggested collection of sad jokes about chemists and chemistry, we of this organization should consider ourselves in duty bound to watch what goes on around us. Only by running down bits of

harmful publicity and by doing something about them, instead of merely laughing at a (possibly) harmful display of ignorance, can we enlighten the public on the true function of chemists in their scheme of things, and thus prevent our hypothetical book from appearing in a "Second and Expanded Edition."
—F. E. W.

NOTICE

Closing date for May issue: April 15th. Please send everything intended for publication to your nearest reporting editor, or directly to Florence E. Wall, Editor, at 233 Broadway, New York City.

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